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APPLICANT : TOSHIBA CORP;

INVENTOR : YOSHIOKA HIROAKI;

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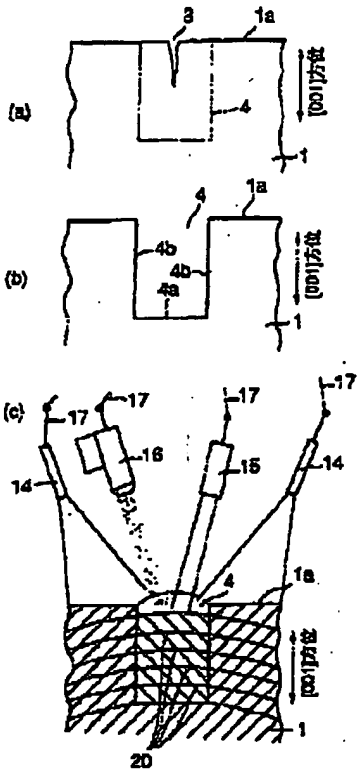
TITLE : REPAIRING METHOD FOR GAS TURBINE BLADE MADE OF NI-BASED. SINGLE CRYSTAL SUPERALLOY AND DEVICE THEREFOR



ABSTRACT : PROBLEM TO BE SOLVED: To efficiently repair a blade of a gas turbine made of a Ni-based single crystal material while minimizing the possibility of the formation of grain boundary and preventing a weld crack.

SOLUTION: The vicinity of a damaged part 2 is removed in a way that the cutout plane is directed to the direction [001] in which crystals preferentially grow. The powdered material having a composition which is the same as or similar to that of a base material is supplied to the cutout part, the material powder is melted by using a torch 14 for melting powdery material, which generates a laser beam, and the material powder is laminated on the cutout part 4. In this case, a torch 15 for heating the base material is used in addition to the torch 14 for melting powdery material, the temperature of the base material is adjusted by the torch 15 for heating the base material, and the repairing work is carried out in a way that the normal direction of the isothermal line of a molten pool coincides or nearly coincides with the direction [001].